

ABSTRACT OF THE INVENTION

A MEMS variable optical attenuator (VOA) comprises at least one semitransparent refraction-mode shutter having a wedge shape and operative to attenuate an optical beam transmitted from a first optical fiber to a second optical fiber using refraction of the beam, and an actuator operative to position the shutter in the path of the beam. Optionally, the VOA further comprises a locking mechanism for locking the shutter after actuation, and at least one damper connected to the shutter for shortening the VOA switching time. The actuator may include in various embodiments a folding suspension with straight or curved springs, some springs interacting electrostatically with one or more side electrodes to provide an essentially linear dependence of shutter movement on actuation voltage.